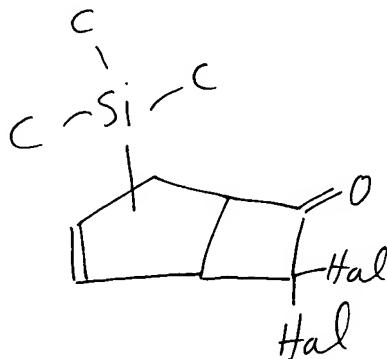


## SEARCH REQUEST FORM

Requestor's Name: BERCH Serial Number: US03/39554B  
Date: 5/17/04 Phone: 521-272-0663 Art Unit: 1624  
Office Rem 5C01 Mailbox 5C18

### Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).



Claim 32

# 2 of 6

GP III

### STAFF USE ONLY

Date completed: 5/17/04  
Searcher: Jan  
Terminal time: 5+10  
Elapsed time: \_\_\_\_\_  
CPU time: \_\_\_\_\_  
Total time: \_\_\_\_\_  
Number of Searches: \_\_\_\_\_  
Number of Databases: \_\_\_\_\_

Search Site  
 STIC  
 CM-1  
 Pre-S  
  
Type of Search  
 N.A. Sequence  
 A.A. Sequence  
 Structure  
 Bibliographic

Vendors  
 IG  
 STN  
 Dialog  
 APS  
 Geninfo  
 SDC  
 DARC/Questel  
 Other

=> fil reg  
FILE 'REGISTRY' ENTERED AT 17:12:52 ON 17 MAY 2004  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 16 MAY 2004 HIGHEST RN 682330-24-1  
DICTIONARY FILE UPDATES: 16 MAY 2004 HIGHEST RN 682330-24-1

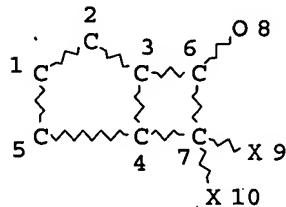
TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

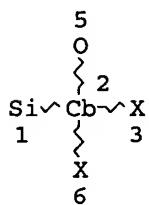
=> d sta que 16  
L1 STR



NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE  
L3 355 SEA FILE=REGISTRY SSS FUL L1  
L4 STR



NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
GGCAT IS PCY AT 2  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED

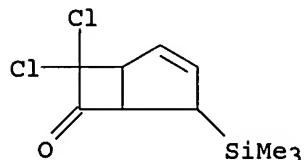
NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE  
L6 15 SEA FILE=REGISTRY SUB=L3 SSS FUL L4100.0% PROCESSED 47 ITERATIONS  
SEARCH TIME: 00.00.01

15 ANSWERS

=&gt; d ide can tot 16

L6 ANSWER 1 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 110043-09-9 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C10 H14 C12 O Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMINFORMRX  
 (\*File contains numerically searchable property data)

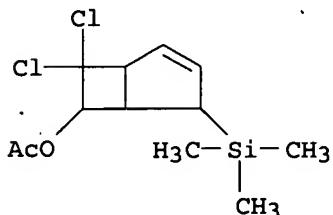


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115396

L6 ANSWER 2 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 110013-58-6 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, acetate, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, acetate, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-( $\pm$ )-  
 MF C12 H18 C12 O2 Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)



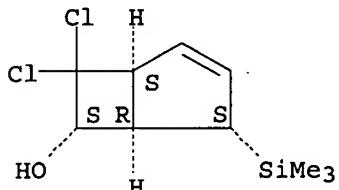
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115396

L6 ANSWER 3 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 110013-57-5 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-(9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-(±)-  
 FS STEREOSEARCH  
 MF C10 H16 Cl2 O Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)

Relative stereochemistry.

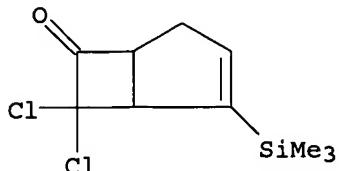


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115396

L6 ANSWER 4 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 109971-23-5 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-2-(trimethylsilyl)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-2-(trimethylsilyl)-, (±)-  
 MF C10 H14 Cl2 O Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)



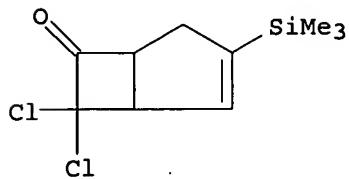
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)

## 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115397

L6 ANSWER 5 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 109971-22-4 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-3-(trimethylsilyl)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-3-(trimethylsilyl)-, (±)-  
 MF C10 H14 Cl2 O Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)

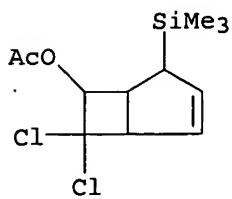


## \*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115397

L6 ANSWER 6 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 109971-11-1 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, acetate, (1α,4α,5α,6β)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, acetate, (1α,4α,5α,6β)- (±)-  
 MF C12 H18 Cl2 O2 Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)



## \*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

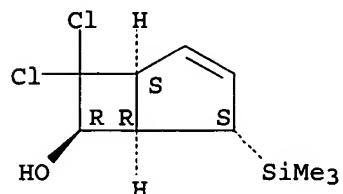
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115396

L6 ANSWER 7 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN

RN 109971-10-0 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\beta$ )- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\beta$ )-( $\pm$ )-  
 FS STEREOSEARCH  
 MF C10 H16 C12 O Si  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)

Relative stereochemistry.



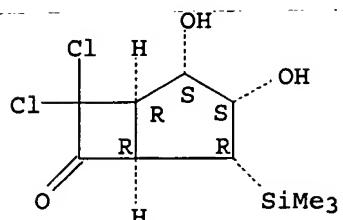
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 107:115396

L6 ANSWER 8 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 79308-03-5 REGISTRY  
 CN Bicyclo[3.2.0]heptan-6-one, 7,7-dichloro-2,3-dihydroxy-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C10 H16 C12 O3 Si  
 LC STN Files: CA, CAPLUS

Relative stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 95:168615

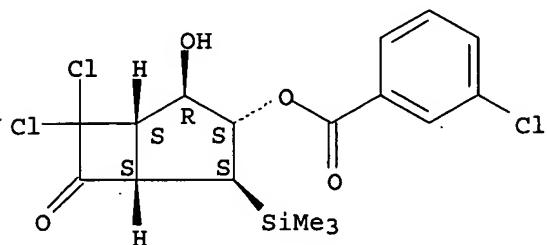
L6 ANSWER 9 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 79308-01-3 REGISTRY  
 CN Benzoic acid, 3-chloro-, 6,6-dichloro-4-hydroxy-7-oxo-2-(trimethylsilyl)bicyclo[3.2.0]hept-3-yl ester,

(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Bicyclo[3.2.0]heptane, benzoic acid deriv.  
 FS STEREOSEARCH  
 MF C17 H19 Cl3 O4 Si  
 LC STN Files: CA, CAPLUS

Relative stereochemistry.



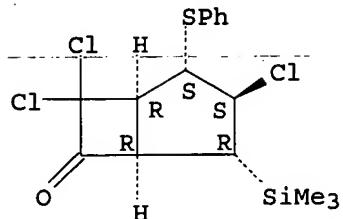
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 95:168615

L6 ANSWER 10 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 79307-99-6 REGISTRY  
 CN Bicyclo[3.2.0]heptan-6-one, 3,7,7-trichloro-2-(phenylthio)-4-(trimethylsilyl)-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C16 H19 Cl3 O S Si  
 LC STN Files: CA, CAPLUS

Relative stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

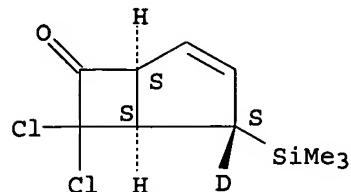
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 95:168615

L6 ANSWER 11 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 78133-63-8 REGISTRY  
 CN Bicyclo[3.2.0]hept-3-en-6-one-2-d, 7,7-dichloro-2-(trimethylsilyl)-, (1 $\alpha$ ,2 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C10 H13 Cl2 D O Si

LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)

### Relative stereochemistry.

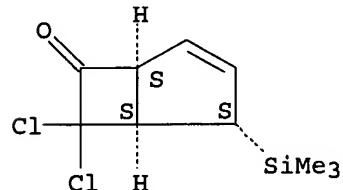


1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 95:43215

L6 ANSWER 12 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 78133-62-7 REGISTRY  
CN Bicyclo[3.2.0]hept-3-en-6-one, 7,7-dichloro-2-(trimethylsilyl)-,  
(1 $\alpha$ ,2 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C10 H14 Cl2 O Si  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)

## Relative stereochemistry.



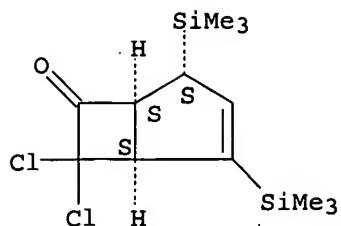
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 95:43215

L6 ANSWER 13 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 78133-61-6 REGISTRY  
CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-2,4-bis(trimethylsilyl)-,  
(1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ) - (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C13 H22 Cl2 O Si2  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)

## Relative stereochemistry.



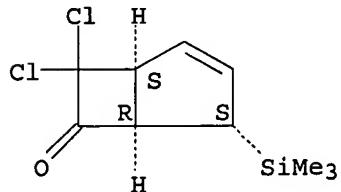
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 95:43215

L6 ANSWER 14 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 63320-25-2 REGISTRY  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )-( $\pm$ )-  
 FS STEREOSEARCH  
 DR 92077-20-8  
 MF C10 H14 Cl2 O Si  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMINFORMRX  
 (\*File contains numerically searchable property data)

Relative stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

7 REFERENCES IN FILE CA (1907 TO DATE)  
 7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 118:147344

REFERENCE 2: 116:193964

REFERENCE 3: 107:115397

REFERENCE 4: 105:226137

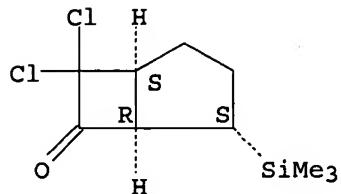
REFERENCE 5: 101:151468

REFERENCE 6: 95:168615

REFERENCE 7: 87:22955

L6 ANSWER 15 OF 15 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 63319-58-4 REGISTRY  
 CN Bicyclo[3.2.0]heptan-6-one, 7,7-dichloro-4-(trimethylsilyl)-, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Bicyclo[3.2.0]heptan-6-one, 7,7-dichloro-4-(trimethylsilyl)-, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- ( $\pm$ )-  
 FS STEREOSEARCH  
 MF C10 H16 Cl2 O Si  
 LC STN Files: CA, CAPLUS

Relative stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 87:23371

=> d his

(FILE 'HOME' ENTERED AT 17:09:29 ON 17 MAY 2004)  
 SET COST OFF

FILE 'REGISTRY' ENTERED AT 17:09:37 ON 17 MAY 2004

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 L3 355 S L1 FUL  
 SAV L3 BERIC395/A  
 L4 STR  
 L5 0 S L4 SAM SUB=L3  
 L6 15 S L4 FUL SUB=L3  
 SAV L6 BERIC395A/A

FILE 'HCAOLD' ENTERED AT 17:12:22 ON 17 MAY 2004

L7 0 S L6

FILE 'HCAPLUS' ENTERED AT 17:12:26 ON 17 MAY 2004

L8 10 S L6

FILE 'USPATFULL, USPAT2' ENTERED AT 17:12:42 ON 17 MAY 2004

L9 0 S L6

FILE 'REGISTRY' ENTERED AT 17:12:52 ON 17 MAY 2004

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 17:13:04 ON 17 MAY 2004

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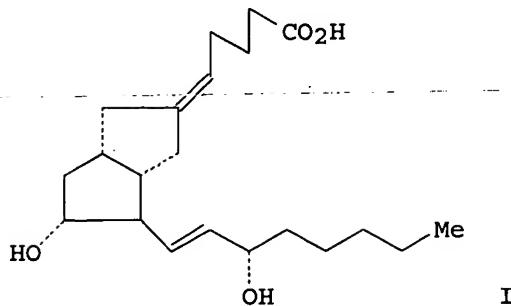
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FILE COVERS 1907 - 17 May 2004 VOL 140 ISS 21  
 FILE LAST UPDATED: 16 May 2004 (20040516/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 18 all hitstr tot

L8 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:147344 HCAPLUS  
 DN 118:147344  
 ED Entered STN: 13 Apr 1993  
 TI Prostanoids. LII. ( $\pm$ )-7,7-Dichloro-4 $\beta$ -trimethylsilylbicyclo[3.2.0]hept-3-en-6-one in prostanoid synthesis. Racemic carbacycline  
 AU Tolstikov, G. A.; Akhmetvaleev, R. R.; Zhurba, V. M.; Vasileva, E. V.; Miftakhov, M. S.  
 CS Inst. Fiz.-Org. Khim., Minsk, Belarus  
 SO Zhurnal Organicheskoi Khimii (1992), 28(4), 712-23  
 CODEN: ZORKAE; ISSN: 0514-7492  
 DT Journal  
 LA Russian  
 CC 26-3 (Biomolecules and Their Synthetic Analogs)  
 GI



AB The products of Prins reaction of formaldehyde and ( $\pm$ )-7,7-dichloro-4 $\beta$ -trimethylsilylbicyclo[3.2.0]hept-3-en-6-one were isolated and characterized. Optimal conditions for obtaining isomeric 2 $\beta$ -acetoxy-6,6(7,7)-dichlorobicyclo[3.2.0]hept-3-en-7(6)-ones and 2 $\beta$ -acetoxyethyl-3 $\alpha$ -acetoxy-6,6(7,7)-dichlorobicyclo[3.2.0]hept-3-en-7(6)-ones, and also (1R,2S,5R,6S,10R)-3,3-dichloro-4-oxo-10-hydroxy(acetoxy)-8-oxatricyclo[4.3.1.0<sub>2,5</sub>]undecanes, useful for subsequent synthesis of modified prostanoids, were determined. An effective synthetic scheme for a ( $\pm$ )-carbacycline (6,9a-methanoprostaglandin I2) (I) was developed starting from monoacetate of the bicycloheptenone series via the corresponding 2 $\beta$ -acetoxyethyl-3 $\alpha$ -acetoxybicyclo[3.3.0]octan-7-

ones.

ST dichlorotrimethylsilylbicycloheptanone prostanoid synthesis; racemic carbacycline synthesis; methanoprostaglandin I2; prostaglandin I2 methano

IT Prostaglandins

RL: SPN (Synthetic preparation); PREP (Preparation)  
(Prins reaction of formaldehyde with olefins in preparation of)

IT Prins reaction  
(of formaldehyde and olefins in synthesis of prostaglandins)

IT 63320-25-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(Prins reaction of, with formaldehyde in synthesis of prostaglandins)

IT 41723-91-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(Wittig reaction of, with silylated prostaglandin derivative)

IT 5307-99-3P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, in Prins reaction of dichloro(trimethylsilyl)bicycloheptanone with formaldehyde)

IT 140240-19-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and Wittig reaction with triphenylphosphonium salt of bromopentanoic acid)

IT 145928-00-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and acetylation of)

IT 140240-18-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and acylation of)

IT 140240-16-0P 145928-02-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and bromination of)

IT 145928-03-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and debromination by tributyltin hydride)

IT 145928-07-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and desilylation of)

IT 72508-42-0P 145928-04-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and hydrolysis of)

IT 140240-09-1P 140240-10-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and insertion reaction with diazomethane)

IT 129659-98-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and ketalization of)

IT 145987-22-0P 145987-23-1P 145987-25-3P 146501-51-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and oxidation by oxalyl chloride)

IT 145987-24-2P 146074-62-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with di-Me (oxoheptyl)phosphonate)

IT 145928-06-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with di-Me (oxylheptyl)phosphonate)

IT 71773-30-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction with sodium (triphenylphosphorinylidene pentanoate)

IT 76825-42-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and silylation of)

IT 63319-59-5P 71773-29-0P 71773-67-6P 129659-95-6P 140240-08-0P  
 140240-11-5P 140240-23-9P 140388-43-8P 140388-44-9P 140846-83-9P  
 145927-99-7P 145928-01-4P 145928-05-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

IT 36969-89-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with silylated prostaglandin intermediate)

IT 56252-56-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reduction by, of prostaglandin intermediates)

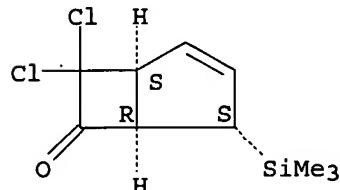
IT 71773-66-5P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (stereoselective synthesis of)

IT 63320-25-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Prins reaction of, with formaldehyde in synthesis of prostaglandins)

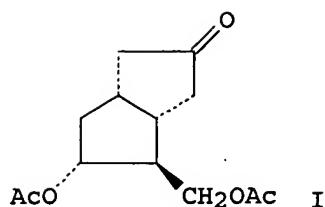
RN 63320-25-2 HCPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L8 ANSWER 2 OF 10 HCPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:193964 HCPLUS  
 DN 116:193964  
 ED Entered STN: 16 May 1992  
 TI A novel approach to carbacyclin  
 AU Tolstikov, G. A.; Akhmetvaleev, R. R.; Zhurba, V. M.; Miftakhov, M. S.  
 CS Inst. Org. Chem., Ufa, 450054, USSR  
 SO Mendeleev Communications (1992), (1), 4-6  
 CODEN: MENCEX; ISSN: 0959-9436  
 DT Journal  
 LA English  
 CC 26-3 (Biomolecules and Their Synthetic Analogs)  
 GI



AB (±)-Carbacyclin was prepared from 7,7-dichlorobicyclo[3.2.0]hept-3-en-7-one which was converted to bicyclooctanone I by 2 routes.

ST carbacyclin synthon chlorobicycloheptenone

IT 5307-99-3 63320-25-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Prins reaction of)

IT 36969-89-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Wittig reaction of, with formylbicyclooctane)

IT 140240-18-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and acetylation of)

IT 140240-16-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and conversion of, to bromohydrin)

IT 140240-17-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and debromination of)

IT 140240-11-5P 140240-14-8P 140240-15-9P 140844-01-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and dechlorination of)

IT 140240-23-9P 140846-83-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and desilylation of)

IT 140240-20-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and esterification of)

IT 140240-22-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with oxoheptylphosphonate)

IT 140240-19-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with phosphoranylidenebutanoate)

IT 140388-43-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reduction of)

IT 129659-95-6P 140240-09-1P 140240-10-4P 140924-10-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and ring enlargement of, with diazomethane)

IT 71773-69-8P 135922-84-8P 140240-07-9P 140240-08-0P 140388-44-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

IT 129659-98-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as carbacyclin intermediate)

IT 71773-67-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from dichlorobicycloheptenone)

IT 140240-21-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation, desilylation, and oxidation of)

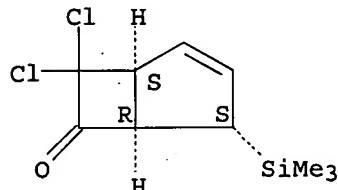
IT 41723-91-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bicyclooctanone)

IT 63320-25-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Prins reaction of)

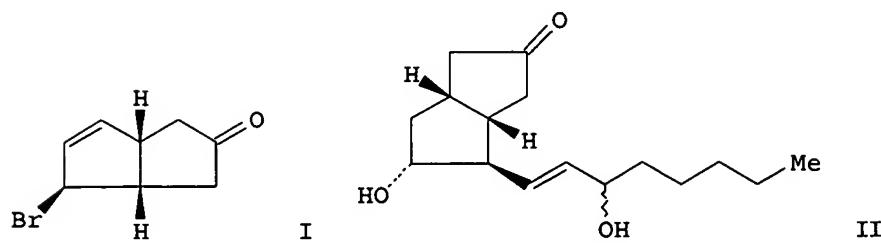
RN 63320-25-2 HCPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
(1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



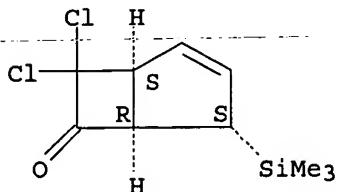
L8 ANSWER 3 OF 10 HCPLUS COPYRIGHT 2004 ACS on STN  
AN 1987:515397 HCPLUS  
DN 107:115397  
ED Entered STN: 05 Oct 1987  
TI New route to carbacyclin  
AU Miftakhov, M. S.; Lesnikova, E. T.; Tolstikov, G. A.  
CS Inst. Khim., Ufa, USSR  
SO Zhurnal Organicheskoi Khimii (1986), 22(10), 2235-6  
CODEN: ZORKAE; ISSN: 0514-7492  
DT Journal  
LA Russian  
CC 26-3 (Biomolecules and Their Synthetic Analogs)  
OS CASREACT 107:115397  
GI



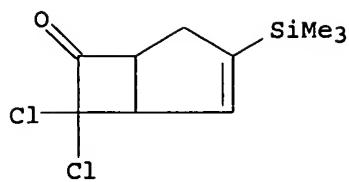
AB The bromopentalenone I was converted into carbacyclin precursor II via reaction with ( $\pm$ )-(*E*)-Bu<sub>3</sub>SnCH:CHCH(OH)(CH<sub>2</sub>)<sub>4</sub>Me.

ST carbacyclin intermediate; prostaglandin carbacyclin intermediate  
 IT 3559-74-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cycloaddn. reaction of, with dichloroketene)  
 IT 109971-06-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and bromination of)  
 IT 63320-25-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reaction with diazomethane)  
 IT 109971-05-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reductive dechlorination of)  
 IT 109971-22-4P 109971-23-5P 109984-80-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 IT 71773-29-0P 71773-30-3P 109971-20-2P 109971-21-3P 109971-24-6P  
 109971-25-7P 109971-26-8P 110013-60-0P 110013-61-1P 110013-62-2P  
 110013-63-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as carbacyclin intermediate)  
 IT 79970-81-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with allyl bromide)  
 IT 69552-46-1P, Carbacyclin  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of, new route for)  
 IT 63320-25-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reaction with diazomethane)  
 RN 63320-25-2 HCPLUS  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

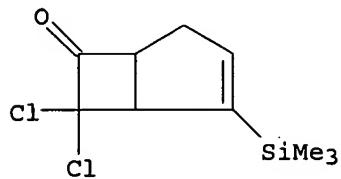


IT 109971-22-4P 109971-23-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 109971-22-4 HCPLUS  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-3-(trimethylsilyl)- (9CI) (CA  
 INDEX NAME)



RN 109971-23-5 HCAPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-2-(trimethylsilyl)- (9CI) (CA INDEX NAME)



L8 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:515396 HCAPLUS

DN 107:115396

ED Entered STN: 05 Oct 1987

TI Prostanoids. XVIII. Synthons for carbacyclin

AU Lesnikova, E. T.; Miftakhov, M. S.; Tolstikov, G. A.

CS Inst. Khim., Ufa, USSR

SO Zhurnal Organicheskoi Khimii (1986), 22(10), 2100-8

CODEN: ZORKAE; ISSN: 0514-7492

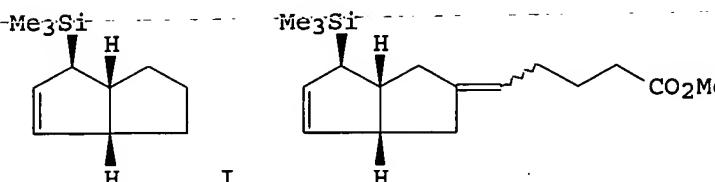
DT Journal

LA Russian

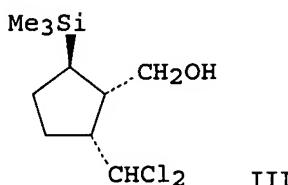
CC 26-3 (Biomolecules and Their Synthetic Analogs)

OS CASREACT 107:115396

GI



II



III

AB Racemic pentalenone I was prepared and converted into several carbacyclin synthons, e.g., II, and related compds., e.g., III.

ST carbacyclin synthon; prostaglandin carbacyclin synthon

IT Prostaglandins

RL: RCT (Reactant); RACT (Reactant or reagent)

(carbacyclins, synthons for)

IT Synthons  
 (for carbacyclins, total synthesis of)

IT 109971-20-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and conversion into carbacyclin synthon)

IT 109971-05-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and reduction with zinc)

IT 53648-63-8P 109971-12-2P 109971-13-3P 109971-14-4P 109971-15-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

IT 109971-06-4P 109971-16-6P 109971-17-7P 109971-18-8P 109971-19-9P  
 109971-21-3P 110013-59-7P 110013-60-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as carbacyclin synthon)

IT 109971-07-5P 109971-08-6P 109971-09-7P 109971-10-0P  
 109971-11-1P 110013-57-5P 110013-58-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as prostaglandin synthon)

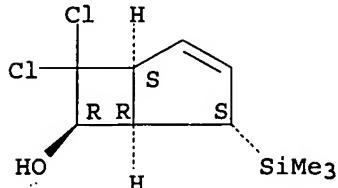
IT 17814-85-6 79970-81-3 110043-09-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (use of, for preparation of carbacyclin synthons)

IT 109971-10-0P 109971-11-1P 110013-57-5P  
 110013-58-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as prostaglandin synthon)

RN 109971-10-0 HCPLUS

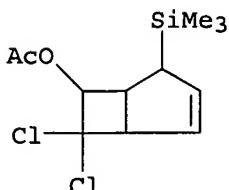
CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 109971-11-1 HCPLUS

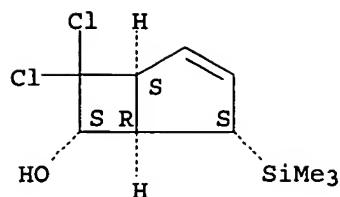
CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, acetate,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\beta$ )- (9CI) (CA INDEX NAME)



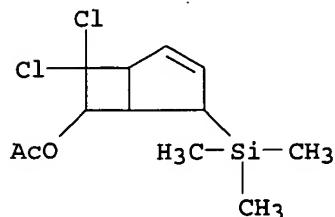
RN 110013-57-5 HCPLUS

CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 110013-58-6 HCAPLUS

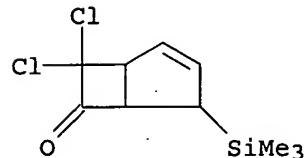
CN Bicyclo[3.2.0]hept-2-en-6-ol, 7,7-dichloro-4-(trimethylsilyl)-, acetate, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )- (9CI) (CA INDEX NAME)

IT 110043-09-9

RL: RCT (Reactant); RACT (Reactant or reagent)  
(use of, for preparation of carbacyclin synthons)

RN 110043-09-9 HCAPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)- (9CI) (CA INDEX NAME)



L8 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1986:626137 HCAPLUS

DN 105:226137

ED Entered STN: 26 Dec 1986

TI New synthesis of ( $\pm$ )-sarkomycin

AU Auyeung, Boonwai; Xu, Jinwen; Qiu, Jinsheng

CS Shanghai Inst. Org. Chem., Acad. Sin., Shanghai, Peop. Rep. China

SO Huaxue Xuebao (1986), 44(5), 479-83

CODEN: HHHPA4; ISSN: 0567-7351

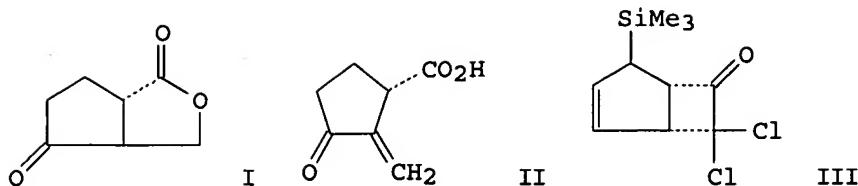
DT Journal

LA Chinese

CC 26-6 (Biomolecules and Their Synthetic Analogs)

OS CASREACT 105:226137

GI



AB A oxobicyclooctanedione (I), the precursor of ( $\pm$ )-sarkomycin (II), was prepared from 7,7-dichloro-4-trimethylsilylbicyclo[3.2.0]heptan-2-ene-6-one (III) via ring cleavage, monodechlorination, lactonization, epoxidn., acid cleavage, followed by hydrogenation-oxidation procedure. Several intermediates prepared are also useful for synthesis of other natural.

ST sarkomycin precursor oxobicyclooctanedione prepn

IT 72581-31-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(intermediate for, preparation of)

IT 63320-25-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(methanolysis of)

IT 99123-39-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and epoxidn. of)

IT 105362-14-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and hydride reduction of)

IT 99123-38-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and lactonization of)

IT 79308-02-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and monodechlorination of)

IT 72154-44-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and oxidation of)

IT 105362-12-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and ring cleavage of)

IT 86853-73-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

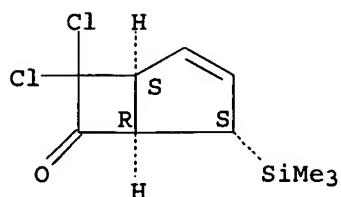
IT 105362-13-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation, oxidation and hydrogenation of)

IT 63320-25-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(methanolysis of)

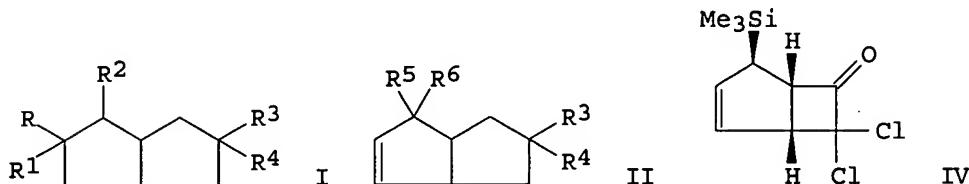
RN 63320-25-2 HCPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



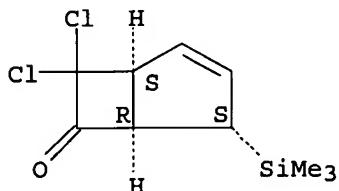
L8 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1984:551468 HCAPLUS  
 DN 101:151468  
 ED Entered STN: 27 Oct 1984  
 TI Synthesis of cis-bicyclo[3.3.0]oct-3-ene-2,7-dione, a highly functionalized cyclopentanoid intermediate  
 AU Carceller, Elena; Moyano, Albert; Serratosa, Felix  
 CS Fac. Quim., Univ. Barcelona, Barcelona, Spain  
 SO Tetrahedron Letters (1984), 25(19), 2031-4  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 CC 24-7 (Alicyclic Compounds)  
 OS CASREACT 101:151468  
 GI



AB Sym. bicyclooctanedione I ( $R1 = R3R4 = O$ ,  $R2 = H$ ) was protected, reduced, and mesylated to give I ( $R = R2 = H$ ;  $R1 = O3SM$ ;  $R3R4 = OCH2CMe2CH2O$ ), which underwent elimination to give I ( $R = H$ ;  $R1R2 = \text{bond}$ ). Epoxidn. and isomerization of the last gave alc. II ( $R5 = OH$ ,  $R6 = H$ ,  $R3R4 = OCH2CMe2CH2O$ ), which was oxidized and deprotected to give the title compound III ( $R5R6 = R3R4 = O$ ) (III) in 8-10% overall yield. III was also prepared starting from cyclopentadiene-Cl2C:CO adduct IV in lower overall yield.  
 ST bicyclooctenedione unsym  
 IT 126-30-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acetalization by, of bicyclooctanedione)  
 IT 51716-63-3  
 RL: PROC (Process)  
 (acetalization of)  
 IT 109971-05-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and dechlorination of)  
 IT 92007-40-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and elimination reaction of)  
 IT 92007-41-5P 109971-06-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)

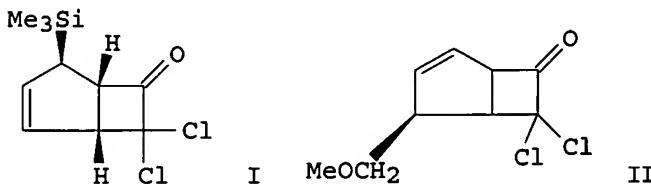
(preparation and epoxidn. of)  
IT 92007-44-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and hydrolysis and selenylmethylation of)  
IT 92007-49-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and hydrolysis of)  
IT 92007-38-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and hydrolysis of, to monoacetal)  
IT 100761-34-0P 100761-35-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and isomerization of, to alc.)  
IT 92007-39-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and mesylation of)  
IT 92007-43-7P 92007-50-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and oxidation of)  
IT 92007-48-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and rearrangement of)  
IT 92007-37-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reduction of)  
IT 92007-45-9P 92007-51-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
IT 63320-25-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ring expansion reaction of)  
IT 63320-25-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ring expansion reaction of)  
RN 63320-25-2--HCAPLUS--  
CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
(1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

### Relative stereochemistry.

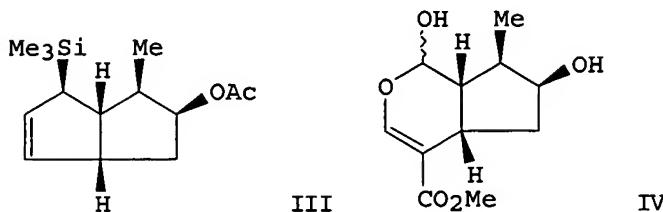


L8 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1981:568615 HCAPLUS  
DN 95:168615  
ED Entered STN: 12 May 1984  
TI The chemistry of an allylsilane: the synthesis of a prostaglandin intermediate and of loganin

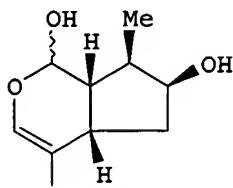
AU Fleming, Ian; Au-Yeung, Boon-Wai  
 CS Chem. Lab., Univ. Cambridge, Cambridge, CB2 1EW, UK  
 SO Tetrahedron, Supplement (1981), (9), 13-24  
 CODEN: TETSAE; ISSN: 0563-2072  
 DT Journal  
 LA English  
 CC 24-7 (Alicyclic Compounds)  
 Section cross-reference(s): 22, 27  
 OS CASREACT 95:168615  
 GI



II



IV



AB The allylsilane I, prepared (70%) by cyclocondensation reaction of  $\text{Cl}_2\text{CHCOCl}$  with 5-(trimethylsilyl)cyclopentadiene, underwent regioselective substitution reaction with a number of electrophiles. E.g., I with  $\text{MeOCH}_2\text{Cl}$  ( $\text{CH}_2\text{Cl}_2$ ,  $\text{SnCl}_2$ , 60 h reflux under  $\text{N}_2$ ) gave 78% II, an intermediate in the preparation of prostaglandins. Allylsilane III, prepared in 7 steps from I, underwent sequential regioselective substitution reaction with  $\text{ClSO}_2\text{NCO}$ , methylation, and oxidation to give loganin aglucone acetate IV (overall yield 5.3% from cyclopentadiene), a known intermediate in the preparation of loganin.

ST silylbicycloheptenone electrophilic substitution stereochem; chloromethoxymethylbicycloheptenone prostaglandin synthon; loganin aglucone acetate aglycon; bicycloheptenone trimethylsilyl chloromethoxymethyl

IT Glycons  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (loganin aglucone acetate, regioselective preparation of)

IT Glycosides  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (loganin, preparation of aglucone acetate of, stereochem. of)

IT Substitution reaction, electrophilic  
 (of (trimethylsilyl)bicycloheptenone, stereochem. of)

IT Cyclocondensation reaction  
 (of (trimethylsilyl)cyclopentadiene with dichloroacetyl chloride, bicycloheptenone by)

IT Prostaglandins  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of cyclopentene lactone as intermediate for)

IT Stereochemistry  
 (regioselectivity, of substitution reaction of allylsilanes with electrophiles)

IT 3559-74-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cyclocondensation reaction of, with dichloroacetyl chloride, bicycloheptenone by)

IT 79389-85-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and acetylation of)

IT 79308-16-0P 79389-84-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and alkylation of)

IT 63319-59-5P 79308-06-8P 79308-12-6P 79356-36-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and dechlorination of)

IT 79307-99-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and elimination reaction of)

IT 63320-31-0P 79308-09-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and oxidation of)

IT 79308-22-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reaction of, with tetraethylammonium acetate)

IT 79308-20-6P 79389-86-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reaction of, with tri-Me phosphite)

IT 63319-65-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and rearrangement of)

IT 79389-23-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reduction of)

IT 63320-25-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and regioselective electrophilic substitution reactions of)

IT 79308-17-1P 79356-35-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and ring cleavage of)

IT 63320-30-9P 79308-00-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and substitution reaction of)

IT 39673-26-2P 39947-83-6P 54074-60-1P 57709-06-5P 73036-12-1P  
 79307-98-5P 79308-01-3P 79308-02-4P 79308-03-5P  
 79308-04-6P 79308-05-7P 79308-07-9P 79308-08-0P 79308-10-4P  
 79308-11-5P 79308-13-7P 79308-14-8P 79308-15-9P 79308-18-2P  
 79308-19-3P 79308-21-7P 79328-28-2P 79328-29-3P 79328-30-6P  
 79328-31-7P 79328-32-8P 79328-33-9P 79356-34-6P 79356-37-9P  
 79389-22-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

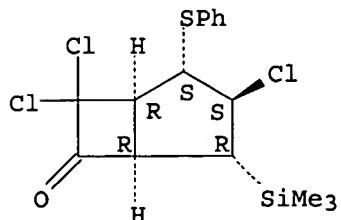
IT 63319-66-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation, dechlorination, and oxidation of)

IT 63319-64-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation, epoxidn., and addition reaction of)

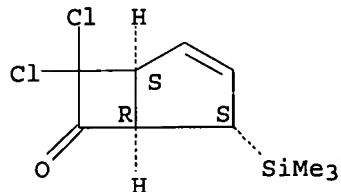
IT 79307-99-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and elimination reaction of)  
 RN 79307-99-6 HCPLUS  
 CN Bicyclo[3.2.0]heptan-6-one, 3,7,7-trichloro-2-(phenylthio)-4-  
 (trimethylsilyl)-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI)  
 (CA INDEX NAME)

Relative stereochemistry.



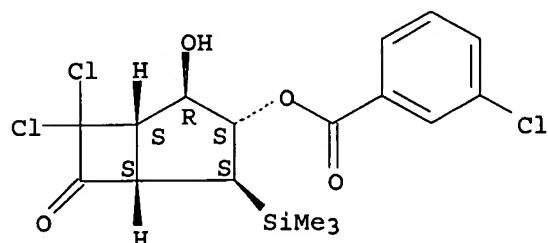
IT 63320-25-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and regioselective electrophilic substitution reactions of)  
 RN 63320-25-2 HCPLUS  
 CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
 (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT 79308-01-3P\_79308-03-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 79308-01-3 HCPLUS  
 CN Benzoic acid, 3-chloro-, 6,6-dichloro-4-hydroxy-7-oxo-2-  
 (trimethylsilyl)bicyclo[3.2.0]hept-3-yl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

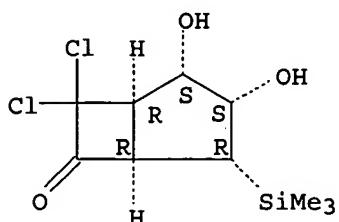
Relative stereochemistry.



RN 79308-03-5 HCPLUS

CN Bicyclo[3.2.0]heptan-6-one, 7,7-dichloro-2,3-dihydroxy-4-(trimethylsilyl)-  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L8 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1981:443215 HCAPLUS

DN 95:43215

ED Entered STN: 12 May 1984

TI The reaction between bis(trimethylsilyl)cyclopentadiene and dichloroketene, and the Diels-Alder reactions between N-phenylmaleimide and two silylated methylcyclopentadienes

AU Fleming, Ian; Williams, Richard Vaughan

CS Chem. Lab., Univ. Cambridge, Cambridge, CB2 1EW, UK

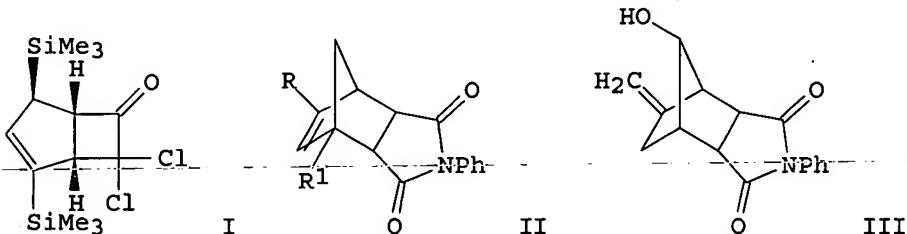
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1981), (3), 684-8  
CODEN: JCPRB4; ISSN: 0300-922X

DT Journal

LA English

CC 29-6 (Organometallic and Organometalloidal Compounds)  
Section cross-reference(s): 22, 23, 24, 25

GI



AB Bis(trimethylsilyl)cyclopentadiene reacted with Cl<sub>2</sub>C:CO, prepared in situ from Cl<sub>2</sub>CHCOCl, to give 72% bicycloheptene I as the sole product.

[(Trimethylsilyl)methyl]cyclopentadiene underwent Diels-Alder reaction with N-phenylmaleimide to give adducts II (R ≠ R<sub>1</sub> = H, CH<sub>2</sub>SiMe<sub>3</sub>).

Epoxidn. of II (R = H, R<sub>1</sub> = CH<sub>2</sub>SiMe<sub>3</sub>) followed by acid-catalyzed epoxide ring cleavage gave norbornane III, in a rearrangement controlled by the silyl group.

ST Diels Alder silylcyclopentadiene phenylmaleimide ketene; cyclopentadiene silyl Diels Alder; rearrangement norbornene neighboring group participation

IT Rearrangement

(epoxide ring cleavage and, of epoxysilylnorbornane, silyl group participation in)

IT Neighboring group participation

(in epoxide ring cleavage and rearrangement of epoxysilylnorbornane, by silyl group)

IT Diels-Alder reaction  
(of silylcyclopentadienes with phenylmaleimide and dichloroketene)

IT Ring cleavage  
(rearrangement and, of epoxysilylnorbornane, silyl group participation in)

IT Stereochemistry  
(regioselectivity, of Diels-Alder reactions of silylated cyclopentadienes)

IT 33630-76-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Diels-Alder reaction of, with dichloroketene)

IT 26519-91-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Diels-Alder reaction of, with phenylmaleimide)

IT 941-69-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Diels-Alder reactions of, with silylcyclopentadienes)

IT 107-30-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkylation by, of bicycloheptene)

IT 16029-98-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkylation by, of methylcyclopentadiene)

IT 79-36-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(dehydrochlorination of)

IT 3559-74-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(methylation of)

IT 56829-02-8P 78134-23-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and Diels-Alder reaction of, with phenylmaleimide)

IT 4591-28-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and Diels-Alder reaction of, with silylcyclopentadiene)

IT 78133-61-6P 78133-63-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and desilylation of)

IT 78133-67-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and epoxidn. of)

IT 78133-70-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and rearrangement of)

IT 78133-64-9P 78133-68-3P 78133-69-4P 78133-71-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

IT 4045-47-0P 4135-31-3P 78133-65-0P 78133-66-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by Diels-Alder reaction)

IT 63319-66-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by alkylation of bicycloheptene)

IT 5307-99-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by desilylation reaction)

IT 78133-62-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, by partial desilylation reaction)

IT 78133-61-6P 78133-63-8P

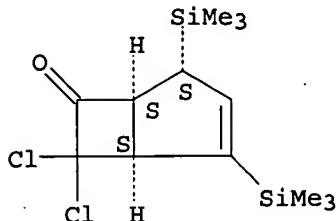
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and desilylation of)

RN 78133-61-6 HCPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-2,4-bis(trimethylsilyl)-, (1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

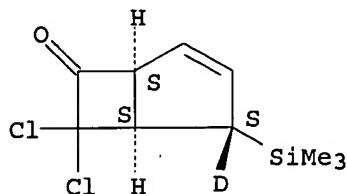
Relative stereochemistry.



RN 78133-63-8 HCPLUS

CN Bicyclo[3.2.0]hept-3-en-6-one-2-d, 7,7-dichloro-2-(trimethylsilyl)-, (1 $\alpha$ ,2 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



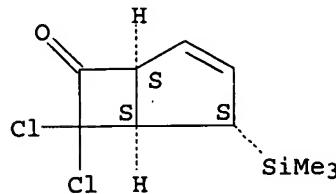
IT 78133-62-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by partial desilylation reaction)

RN 78133-62-7 HCPLUS

CN Bicyclo[3.2.0]hept-3-en-6-one, 7,7-dichloro-2-(trimethylsilyl)-, (1 $\alpha$ ,2 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L8 ANSWER 9 OF 10 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1977:423371 HCPLUS

DN 87:23371

ED Entered STN: 12 May 1984

TI Allylsilanes in organic synthesis: a synthesis of prostaglandins

AU Au-Yeung, Boon-Wai; Fleming, Ian

CS Chem. Lab., Univ. Cambridge, Cambridge, UK

SO Journal of the Chemical Society, Chemical Communications (1977), (3),

79-80

CODEN: JCCCAT; ISSN: 0022-4936

DT Journal

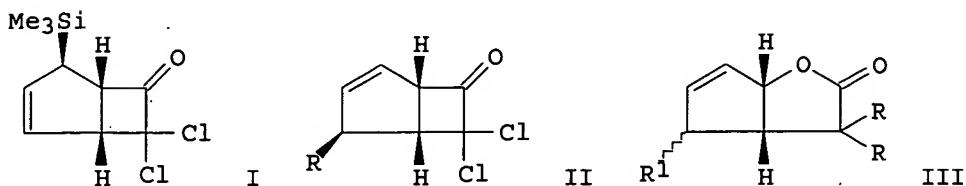
LA English

CC 29-6 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 24

OS CASREACT 87:23371

GI



AB The allylsilane I, prepared from dichloroketene and (trimethylsilyl)cyclopentadiene, was treated with Br in hexane, PhSCl and NaF in aqueous MeOH, and MeOCH<sub>2</sub>Cl/SnCl<sub>4</sub> to give II (R = Br, SPh, CH<sub>2</sub>OMe), resp. Treatment of I with H<sub>2</sub>O<sub>2</sub>-AcOH followed by epoxidn. and hydrolysis gave 73% lactone III (R = Cl, R<sub>1</sub> =  $\alpha$ -OH). Treatment of II (R = CH<sub>2</sub>OMe) with H<sub>2</sub>O<sub>2</sub> in AcOH followed by dechlorination gave the racemic lactone III (R = H, R<sub>1</sub> =  $\beta$ -CH<sub>2</sub>OMe) which is an intermediate in prostaglandin synthesis.

ST silylbicycloheptenone reaction electrophile; bicycloheptenone silyl reaction electrophile; prostaglandin synthon silylbicycloheptenone

IT 107-30-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkylation by, of allylsilane)

IT 4591-28-0

RL: PROC (Process)  
(cycloaddn. of, with (trimethylsilyl)cyclopentadiene)

IT 25134-15-0

RL: PROC (Process)  
(cycloaddn. of, with dichloroketene)

IT 63319-63-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and Evans reaction of)

IT 63319-59-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and dechlorination of)

IT 63319-64-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and epoxidn. of)

IT 63319-65-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and hydrolysis of)

IT 63319-66-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and oxidation of)

IT 54074-60-1P 57709-06-5P 79356-34-6P 79356-35-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

IT 63319-58-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, and reaction with electrophiles)

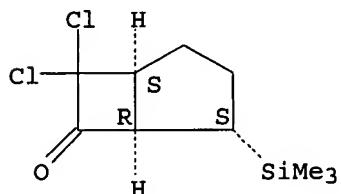
IT 39673-26-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as intermediate in prostaglandin preparation)

IT 63319-58-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, and reaction with electrophiles)

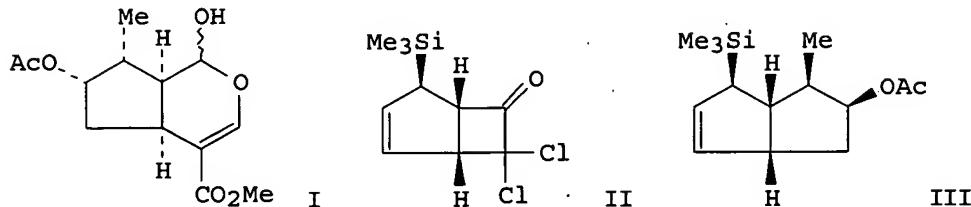
RN 63319-58-4 HCAPLUS

CN Bicyclo[3.2.0]heptan-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
(1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L8 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1977:422955 HCAPLUS  
DN 87:22955  
ED Entered STN: 12 May 1984  
TI Allyl silanes in organic synthesis: a new synthesis of loganin  
AU Au-Yeung, Boon-Wai; Fleming, Ian  
CS Chem. Lab., Univ. Cambridge, Cambridge, UK  
SO Journal of the Chemical Society, Chemical Communications (1977), (3), 81  
CODEN: JCCCAT; ISSN: 0022-4936  
DT Journal  
LA English  
CC 27-13 (Heterocyclic Compounds (One Hetero Atom))  
Section cross-reference(s): 29, 33  
GI



AB The racemic aglucon acetate I of loganin was prepared from the allylsilane II in 13 steps via the allylsilane III. II is available from cyclopentadiene; the overall yield of I from cyclopentadiene was 5.3%. I may be converted to loganin by known methods.

ST loganin aglucon acetate; allylsilane loganin aglucon prep;  
cyclopentapyran methoxycarbonyl

IT 63320-25-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(dechlorination of, in loganin aglucon acetate preparation)

IT 39947-83-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

IT 63320-27-4P 63320-30-9P 63320-31-0P 63358-09-8P 63368-58-1P  
79389-23-4P 79389-84-7P 79389-85-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as intermediate in loganin aglucon acetate preparation)

IT 18524-94-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from (trimethylsilyl)bicycloheptenone derivative)

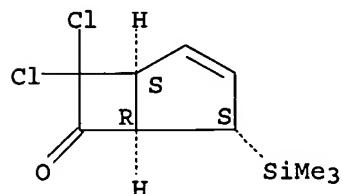
IT 63320-25-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(dechlorination of, in loganin aglucon acetate preparation)

RN 63320-25-2 HCPLUS

CN Bicyclo[3.2.0]hept-2-en-6-one, 7,7-dichloro-4-(trimethylsilyl)-,  
(1 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



=>